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7590   10/31/2012
FROMMER LAWRENCE & HAUG LLP
745 FIFTH AVENUE
NEW YORK, NY 10151

EXAMINER
DUFFIELD, JEREMY S

ART UNIT	PAPER NUMBER
2427	

DATE MAILED: 10/31/2012

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,779	06/24/2003	Tetsujiro Kondo	450100-04609	1681

TITLE OF INVENTION: AUDIENCE STATE ESTIMATION SYSTEM, AUDIENCE STATE ESTIMATION METHOD, AND AUDIENCE STATE ESTIMATION PROGRAM

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1770	$300	$0	$2070	01/31/2013

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

Page 1 of 3

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Complete and send this form, together with applicable fee(s), to: <u>Mail</u> Mail Stop ISSUE FEE
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or <u>Fax</u> (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

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745 FIFTH AVENUE
NEW YORK, NY 10151

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

_____ (Depositor's name)
_____ (Signature)
_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/602,779	06/24/2003	Tetsujiro Kondo	450100-04609	1681

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nonprovisional	NO	$1770	$300	$0	$2070	01/31/2013

EXAMINER	ART UNIT	CLASS-SUBCLASS
DUFFIELD, JEREMY S	2427	725-012000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:
☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)
☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)
☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.   ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____   Date _____

Typed or printed name _____   Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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PTOL-85 (Rev. 02/11) Approved for use through 08/31/2013.   OMB 0651-0033   U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1366 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1366 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 02/11)

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

	Application No.	Applicant(s)	
Notice of Allowability	10/602,779	KONDO ET AL.	
	Examiner	Art Unit	
	JEREMY DUFFIELD	2427	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *the communication filed 22 October 2012*.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____;
the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are *1,2,4-10,29-37 and 55-58*.

4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

      a) ☒ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the
           International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF
INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
        Paper No./Mail Date _____.

    **Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of
    each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the
attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO/SB/08),
    Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit
    of Biological Material

5. ☐ Notice of Informal Patent Application

6. ☐ Interview Summary (PTO-413),
    Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____.

EXAMINER'S AMENDMENT

1.   An examiner's amendment to the record appears below. Should the changes
and/or additions be unacceptable to applicant, an amendment may be filed as provided
by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be
submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview
with William Frommer on 26 October 2012.

The application has been amended as follows:

1. (Currently Amended) An audience state estimation system comprising:

imaging device for imaging an audience and generating a video signal
relative to the audience thus imaged;

movement amount detection device for detecting a movement amount of
said audience based on said video signal,

wherein the movement amount is determined from a magnitude of
movement, periodicity of movement, a center of gravity of a power spectrum, a
volume of sound, and periodicity of sound based on a contents provision state
which indicates an environment condition of the audience that affects difficulty
factors for obtaining movement of the audience and for obtaining sound of the
audience,

wherein the movement amount detection device discriminates and
extracts a pixel range which is a flesh-color area identifying flesh color from said

video signal, divides the extracted flesh-color area into blocks, and calculates a movement vector for each of the divided blocks,

wherein the blocks include a face block representing a face unit of the audience and a hand block representing a hand unit of the audience, and block matching of a current image and a next or previous frame image is performed for each of the blocks,

wherein the movement vector is the movement direction and the movement amount when a result of the block matching indicating images of the blocks are matched,

wherein each of the divided blocks includes a plurality of pixels, and each of the plurality of pixels identifies flesh color; and

estimation device for estimating an audience state based on a comparison result of said movement amount and a predetermined reference level,

wherein said estimation device estimates said audience state to be in a state of beating time with the hands when said movement periodicity is larger than the predetermined reference level, and estimates said audience state to be in a state of clapping when said movement periodicity is not larger than said predetermined reference level.

6. (Currently Amended) An audience state estimation system comprising:

imaging device for imaging an audience and generating a video signal relative to the audience thus imaged;

movement periodicity detection device for detecting movement periodicity of said audience based on said video signal,

wherein the movement periodicity is determined from a magnitude of movement, periodicity of movement, a center of gravity of a power spectrum, a volume of sound, and periodicity of sound based on a contents provision state which indicates an environment condition of the audience that affects difficulty factors for obtaining movement of the audience and for obtaining sound of the audience,

wherein the movement periodicity detection device discriminates and extracts a pixel range which is a flesh-color area identifying flesh color from said video signal, divides the extracted flesh-color area into blocks, and calculates a movement vector for each of the divided blocks,

wherein the blocks include a face block representing a face unit of the audience and a hand block representing a hand unit of the audience, and block matching of a current image and a next or previous frame image is performed for each of the blocks,

wherein the movement vector is the movement direction and the movement amount when a result of the block matching indicating images of the blocks are matched,

wherein each of the divided blocks includes a plurality of pixels, and each of the plurality of pixels identifies flesh color; and

estimation device for estimating an audience state based on a comparison result of the movement periodicity of said audience and a predetermined reference level,

wherein said estimation device estimates said audience state to be in a state of beating time with the hands when said movement periodicity is larger than the predetermined reference level, and estimates said audience state to be in a state of clapping when said movement periodicity is not larger than said predetermined reference level.

11. (Cancelled).

29. (Currently Amended) An audience state estimation system comprising:

input device for inputting and generating at least one of video signal obtained by imaging an audience and audio signal obtained according to sound from said audience;

characteristic amount detection device for detecting, based on said video signal, at least one of a movement amount and movement periodicity of said audience, and for detecting, based on said audio signal, a piece of information on at least one of a volume of sound from said audience, periodicity of said sound, and a frequency component of said sound,

wherein the at least one of a movement amount and movement periodicity is determined from a magnitude of movement, periodicity of movement, a center of gravity of a power spectrum, a volume of sound, and periodicity of sound based on a contents provision state which indicates an environment condition of the audience that affects difficulty factors for obtaining movement of the audience and for obtaining sound of the audience,

wherein the characteristic amount detection device discriminates and extracts a pixel range which is a flesh-color area identifying flesh color from said video signal, divides the extracted flesh-color area into blocks, and calculates a movement vector for each of the divided blocks,

wherein the blocks include a face block representing a face unit of the audience and a hand block representing a hand unit of the audience, and block matching of a current image and a next or previous frame image is performed for each of the blocks,

wherein the movement vector is the movement direction and the movement amount when a result of the block matching indicating images of the blocks are matched,

wherein each of the divided blocks includes a plurality of pixels, and each of the plurality of pixels identifies flesh color; and

estimation device for estimating an audience state based on a comparison result of the detected result of said characteristic amount detection device and a predetermined reference level.

wherein said estimation device estimates said audience state to be in a state of beating time with the hands when said movement periodicity is larger than the predetermined reference level, and estimates said audience state to be in a state of clapping when said movement periodicity is not larger than said predetermined reference level.

31. (Currently Amended) An audience state estimation method comprising:

imaging an audience and generating a video signal relative to the audience thus imaged;

detecting a movement amount of said audience based on said video signal,

wherein the movement amount is determined from a magnitude of movement, periodicity of movement, a center of gravity of a power spectrum, a volume of sound, and periodicity of sound based on a contents provision state which indicates an environment condition of the audience that affects difficulty factors for obtaining movement of the audience and for obtaining sound of the audience,

discriminating and extracting a pixel range which is a flesh-color area identifying flesh color from said video signal;

dividing the extracted flesh-color area into blocks;

calculating a movement vector for each of the divided blocks,

wherein the blocks include a face block representing a face unit of the audience and a hand block representing a hand unit of the audience, and block matching of a current image and a next or previous frame image is performed for each of the blocks,

wherein the movement vector is the movement direction and the movement amount when a result of the block matching indicating images of the blocks are matched,

wherein each of the divided blocks includes a plurality of pixels, and each of the plurality of pixels identifies flesh color; and

estimating an audience state based on a comparison result of said movement amount and a predetermined reference level,

wherein said audience state is estimated to be in a state of beating time with the hands when said movement periodicity is larger than the predetermined reference level, and said audience state is estimated to be in a state of clapping when said movement periodicity is not larger than said predetermined reference level.

35. (Currently Amended) An audience state estimation method comprising:

imaging an audience and generating a video signal relative to the audience thus imaged;

detecting movement periodicity of said audience based on said video signal,

wherein the movement periodicity is determined from a magnitude of movement, periodicity of movement, a center of gravity of a power spectrum, a volume of sound, and periodicity of sound based on a contents provision state which indicates an environment condition of the audience that affects difficulty factors for obtaining movement of the audience and for obtaining sound of the audience,

discriminating and extracting a pixel range which is a flesh-color area identifying flesh color from said video signal;

dividing the extracted flesh-color area into blocks;

calculating a movement vector for each of the divided blocks,

wherein the blocks include a face block representing a face unit of the audience and a hand block representing a hand unit of the audience, and block matching of a current image and a next or previous frame image is performed for each of the blocks,

wherein the movement vector is the movement direction and the movement amount when a result of the block matching indicating images of the blocks are matched,

wherein each of the divided blocks includes a plurality of pixels, and each of the plurality of pixels identifies flesh color; and

estimating an audience state based on a comparison result of the

movement periodicity of said audience and a predetermined reference level.

wherein said audience state is estimated to be in a state of beating time

with the hands when said movement periodicity is larger than the predetermined

reference level, and said audience state is estimated to be in a state of clapping

when said movement periodicity is not larger than said predetermined reference

level.

38. (Cancelled).

55. (Currently Amended) An audience state estimation method

comprising:

generating any one of a video signal obtained by imaging an audience and

an audio signal according to sound from said audience;

detecting, based on said video signal, at least one of a movement amount

and movement periodicity of said audience,

wherein the at least one of a movement amount and movement periodicity

is determined from a magnitude of movement, periodicity of movement, a center

of gravity of a power spectrum, a volume of sound, and periodicity of sound

based on a contents provision state which indicates an environment condition of

the audience that affects difficulty factors for obtaining movement of the audience

and for obtaining sound of the audience,

discriminating and extracting a pixel range which is a flesh-color area identifying flesh color from said video signal;

dividing the extracted flesh-color area into blocks;

calculating a movement vector for each of the divided blocks,

wherein the blocks include a face block representing a face unit of the audience and a hand block representing a hand unit of the audience, and block matching of a current image and a next or previous frame image is performed for each of the blocks,

wherein the movement vector is the movement direction and the movement amount when a result of the block matching indicating images of the blocks are matched,

wherein each of the divided blocks includes a plurality of pixels, and each of the plurality of pixels identifies flesh color;

detecting, based on said audio signal, a piece of information on at least one of a volume of sound from said audience, periodicity of said sound, and a frequency component of said sound; and

estimating an audience state based on a comparison result of said detected result and a predetermined reference level.

wherein said audience state is estimated to be in a state of beating time with the hands when said movement periodicity is larger than the predetermined reference level, and said audience state is estimated to be in a state of clapping

when said movement periodicity is not larger than said predetermined reference level.

57. (Currently Amended) A non-transitory computer-readable medium storing an audience state estimation program, executed by a computer-processor, for estimating an audience state by processing information, said program comprising:

a step of performing any one of detection, based on said video signal obtained by imaging the audience, for at least one of a movement amount and movement periodicity of said audience, and detection, based on said audio signal according to sound from said audience, for a piece of information on at least one of a volume of sound from said audience, periodicity of said sound, and a frequency component of said sound,

wherein the at least one of a movement amount and movement periodicity is determined from a magnitude of movement, periodicity of movement, a center of gravity of a power spectrum, a volume of sound, and periodicity of sound based on a contents provision state which indicates an environment condition of the audience that affects difficulty factors for obtaining movement of the audience and for obtaining sound of the audience,

wherein the step of performing detection discriminates and extracts a pixel range which is a flesh-color area identifying flesh color from said video

signal, divides the extracted flesh-color area into blocks, and calculates a

movement vector for each of the divided blocks,

wherein the blocks include a face block representing a face unit of

the audience and a hand block representing a hand unit of the audience, and

block matching of a current image and a next or previous frame image is

performed for each of the blocks,

wherein the movement vector is the movement direction and the

movement amount when a result of the block matching indicating images of the

blocks are matched,

wherein each of the divided blocks includes a plurality of pixels, and

each of the plurality of pixels identifies flesh color; and

a step of estimating the audience state based on a comparison result of

said detected result and a predetermined reference level.

wherein said audience state is estimated to be in a state of beating time

with the hands when said movement periodicity is larger than the predetermined

reference level, and said audience state is estimated to be in a state of clapping

when said movement periodicity is not larger than said predetermined reference

level.

Allowable Subject Matter

2.   Claims 1, 2, 4-10, 29-37, and 55-58 are allowed.

The following is an examiner's statement of reasons for allowance:

The examiner concludes that the prior art does not teach alone or in combination all the limitations of claims 1, 2, 4-10, 29-37, and 55-58. In particular, the prior art does not teach "wherein the movement amount is determined from a magnitude of movement, periodicity of movement, a center of gravity of a power spectrum, a volume of sound, and periodicity of sound based on a contents provision state" in combination with the limitation "wherein said estimation device estimates said audience state to be in a state of beating time with the hands when said movement periodicity is larger than the predetermined reference level, and estimates said audience state to be in a state of clapping when said movement periodicity is not larger than said predetermined reference level" and other limitations as stated in claim 1 and similarly in claims 6, 29, 31, 35, 55, and 58. Therefore, claims 1, 2, 4-10, 29-37, and 55-58 are allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEREMY DUFFIELD whose telephone number is (571)270-1643. The examiner can normally be reached on Mon.-Fri. 8:00 A.M.-5:30 P.M. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Beliveau can be reached on (571) 272-7343. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

26 October 2012

/Jeremy Duffield/
Examiner, Art Unit 2427

/Scott Beliveau/
Supervisory Patent Examiner, Art Unit 2427